

ANIMAL KEEPERS' FORUM

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Table of Contents

| | |
|---|---------|
| About the Cover/Information for Contributors..... | 250 |
| From the President | 251-252 |
| New Members | 256 |
| Coming Events..... | 258 |
| <i>Perspectives on Poaching: A Park Guard Story</i> | 260-265 |
| <i>An Update from the Snow Leopard Trust</i> | 266-267 |
| <i>Observations on Eco-tourism and Conservation in India</i> | 268-276 |
| Enrichment Options: <i>Feeling Stuck in a Rut? Ideas on How to Enrich Your Enrichment</i> ... | 277-279 |
| Conservation Station: <i>Rain Gardens: Bringing Conservation Home</i> | 280-281 |
| Training Tales: <i>Ideas to Help New Training Programs (Part 2)</i> | 282-286 |
| Research in Practice: <i>Moderating Undesirable Behavior in Petting Zoo Animals</i> | 287-290 |
| Conservation/Legislative Update | 291-292 |



MISSION STATEMENT

(Revised April 2009)

American Association of Zoo Keepers, Inc.

The American Association of Zoo Keepers, Inc. exists to advance excellence in the animal keeping profession, foster effective communication beneficial to animal care, support deserving conservation projects, and promote the preservation of our natural resources and animal life.

ABOUT THE COVER

This month's cover features a snow leopard (*Panthera uncia*) taken at The Cat Survival Trust, a UK-based charity whose primary focus is the purchase of natural habitat around the world in order to provide protected areas for wild felines. The photo was taken by Anne-Marie Kalus, a UK-based wildlife photographer with a keen interest in conservation. Her photographic work is available free of charge, to any organization or charity that wishes to use it to raise awareness of conservation needs, or to promote and champion wildlife and conservation causes. She is hoping to launch her own photography website in the near future. In the meantime, her work can be seen and she can be contacted through her Flickr page at flickr.com/photos/annemariekalus/sets/.

Researchers estimate that there are between 4,000 and 6,500 snow leopards left in the wild. No one has an exact count because snow leopards are so elusive and inhabit such harsh and remote habitat that they are rarely seen. There are about 600 of these cats in zoos around the world. They are highly adapted for living in the cold climate of the mountains of Central Asia. They are usually solitary, except when females are raising cubs. Mating occurs in late winter and one to five (usually two or three) cubs are born 90-100 days later. The cubs remain with their mother until they become independent, normally after about 18-22 months. Threats to snow leopards include poaching, loss of prey, retribution killings by herders for killing livestock, loss of habitat, lack of effective protection, and lack of awareness and support. To learn more, go to snowleopard.org.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the Editor. The Editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or e-mail contributions of late-breaking news or last-minute insertions are accepted as space allows. **Phone (330) 483-1104; FAX (330) 483-1444; e-mail is shane.good@aazk.org**. If you have questions about submission guidelines, please contact the Editor. Submission guidelines are also found at: aazk.org/akf-submission-guidelines/.

Deadline for each regular issue is the 3rd of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the Editor.

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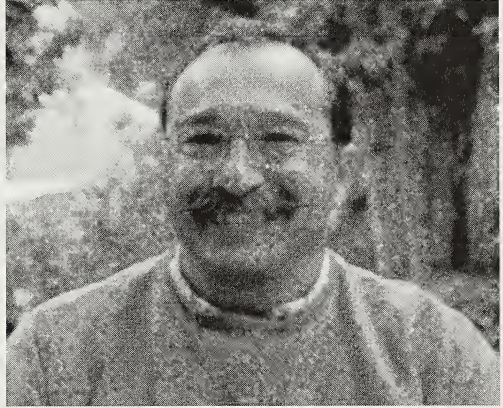
To Contact the *AKF* Editor:

Shane Good, Media Production Editor
P.O. Box 535, Valley City, OH 44280
330-483-1104
shane.good@aazk.org

FROM THE PRESIDENT

The Living Library

When I was a hospital keeper, many years ago, I had the privilege of working with the Animal Care Manager of the Bird Department whenever birds were brought into our care. Wayne was "old school" and had traveled the world seeing many of the birds in our collection in their natural habitat. He could look at a bird, give you its scientific name and then talk about the bird as if it was the only thing he ever studied in his life. He did this with every species and each time that he described a bird or gave insight about its natural habitat, or described its diet, I listened and gleaned as much as I could. Every time he brought in a new bird into quarantine, it was as though he was laying eyes upon this species for the very first time. When he passed away at the age of 55, after suffering from a chronic illness, I realized that every experience, every piece of knowledge, and every drop of enthusiasm was lost forever. I was both saddened by the loss of a friend and struck by the profundity of an inaccessible volume of valuable animal care knowledge. What made this even more profound was that much of Wayne's knowledge was based on hands-on experience, something not found in text books.



At some point in our careers we have come across the paths of seasoned keepers, supervisors, or managers whose wealth of knowledge could fill volumes in an animal care library. Interactions with these living libraries help shape the way we see our profession and provide valuable learning experiences. In a way, they are bridge builders; mentors who help connect and shape our profession in ways that enable us to progress along on our journey as animal care providers. In our Association, we have many such mentors, one of whom just recently retired from the profession.

On behalf of the American Association of Zoo Keepers, I would like to congratulate Ollie Claffey on his recent retirement as an Animal Care Professional. Ollie has been an outstanding member of AAZK since 1977 and began his service on the National Board of Directors in 1985, filling in for an unexpired term. In 1987, he was elected to his first full term on the Board. In 1988, Ollie became Vice-President of the Association and then President from 1990-1991. From 1985 to 1993, Ollie faithfully served the Association and its membership. Ever a constant presence at AAZK conferences, Ollie proved that his role as a leader never diminished after his years as a Board member. Should his adventures following his retirement take him away from our Association, he will be sorely missed. Nonetheless, we congratulate him on this milestone event and wish him the very best.

On a personal note, the very first AAZK member I ever met at a conference was Ollie Claffey at the ICZ conference in Gold Coast, Australia. At each conference thereafter, Ollie made it a point to engage in a conversation with me. I was fortunate that my first impression of the Association on a national level was developed by one of its past leaders.

Building a Bridge

Ollie's role as a Board Member at AAZK helped pave the way for this Association and for those of us who follow in his footsteps. His leadership has helped bridge many gaps and pave many paths for this Association. It is fitting then that when I heard the news of his retirement, I was reminded of this poem by Will Allen Dromgoole (1860-1934).

The Bridge Builder

An old man, going a lone highway,
Came, at the evening, cold and gray,
To a chasm, vast, and deep, and wide,
Through which was flowing a sullen tide.

The old man crossed in the twilight dim;
The sullen stream had no fear for him;
But he turned, when safe on the other side,
And built a bridge to span the tide.

"Old man," said a fellow pilgrim, near,
"You are wasting strength with building here;
Your journey will end with the ending day;
You never again will pass this way;
You've crossed the chasm, deep and wide-
Why build you this bridge at the evening tide?"

The builder lifted his old gray head:
"Good friend, in the path I have come," he said,
"There followeth after me today,
A youth, whose feet must pass this way.

This chasm, that has been naught to me,
To that fair-haired youth may a pitfall be.
He, too, must cross in the twilight dim;
Good friend, I am building this bridge for him."

Thank you, Ollie for paving the way for others here at AAZK and at your institution.

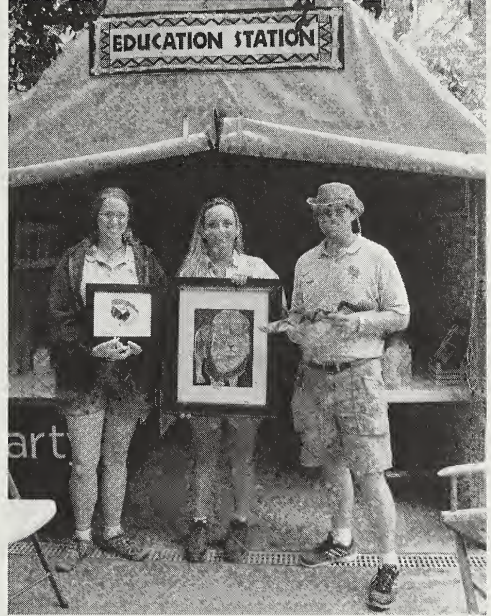
Farewell and Godspeed,

Bob Cisneros

Special Thanks to Lion Country Safari Chapter



The AAZK Board of Directors sends their sincere appreciation to the **Lion Country Safari Chapter** for sponsoring this month's issue of the *Animal Keepers' Forum*. The Chapter made a special contribution designated for the *AKF* with their re-charter materials. It is the special contributions of our Chapters that allow our Association to continue to grow, expand your professional development opportunities, and reaffirm our commitment to your flagship conservation programs. Our thanks goes out to the Lion Country Safari Chapter for sponsoring this month's *AKF*, and to all of the Chapters that support the Association throughout the year.



The three top winners, and Lion Country Safari Chapter members, holding their art from this year's AAZK Staff Art Show (from left to right): 2nd Place-Sara Ziegenfuss; 1st Place-Ashleigh Kandrac; 3rd Place-Sean Mallee.

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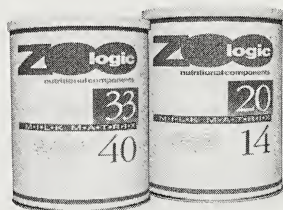
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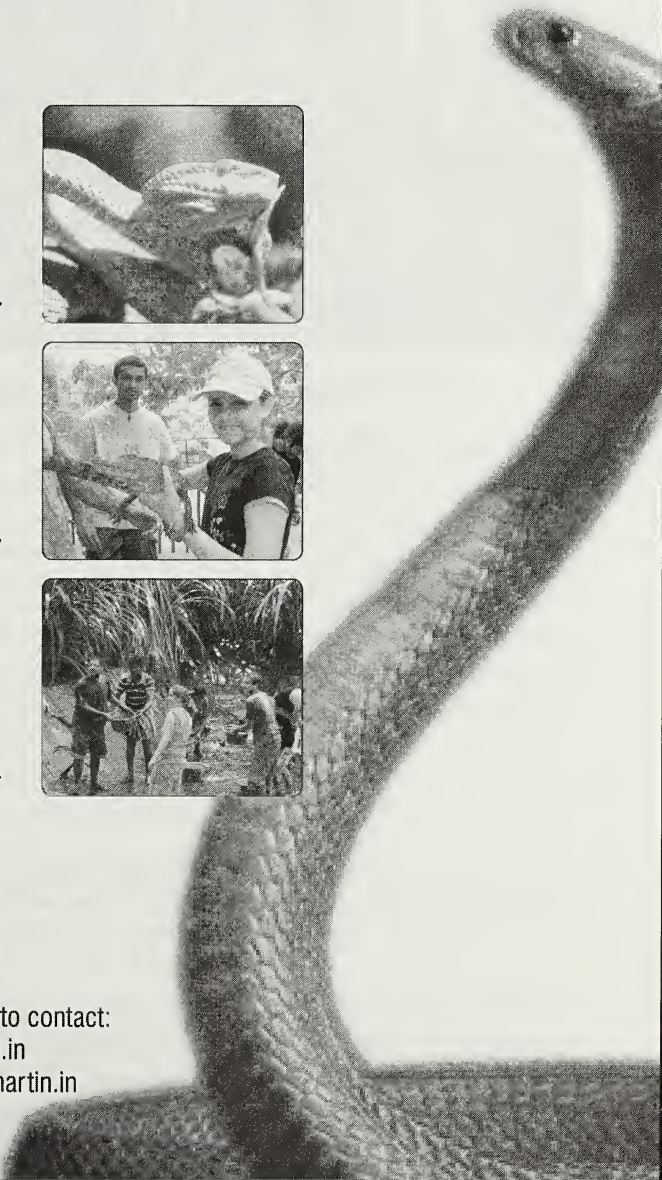
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For registration or any other
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— AAZK ANNOUNCES NEW MEMBERS —

NEW PROFESSIONALS

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David Morales, Queens Zoo (NY)
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Katelyn Massarone, Prospect Park Zoo, Brooklyn (NY)
Leah Valerio, The Wild Center, Tupper Lake (NY)
Stephanie Radzik, Binghamton Zoo at Ross Park, Binghamton (NY)
Elise Newman, Binghamton Zoo at Ross Park, Binghamton (NY)
Jenna Bovee, Seneca Park Zoo, Rochester (NY)
Kerry King-Rahn, National Aquarium, Baltimore (MD)
Jeff Downing, Catoclin Wildlife Preserve & Zoo, Thurmont (MD)
Patti Bernhardt, Virginia Zoological Park, Norfolk (VA)
Mike Tetalman, Zoo Atlanta, Atlanta (GA)
Lisa Henderson, Wild Adventures (FL)
Julia Bragovich, Discovery Cove (FL)
Ashley Flaig, Panther Ridge (FL)
Carolyn Taylor, Jackson Zoo, Jackson (MS)
Kristin Bingham, Indianapolis Zoo, Indianapolis (IN)
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Gwen Gerdsem, Oregon Zoo, Portland (OR)
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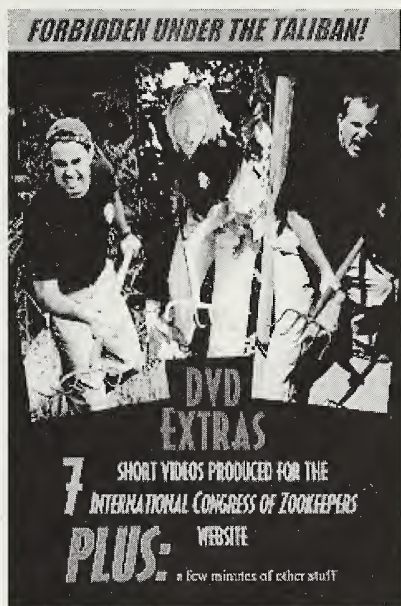
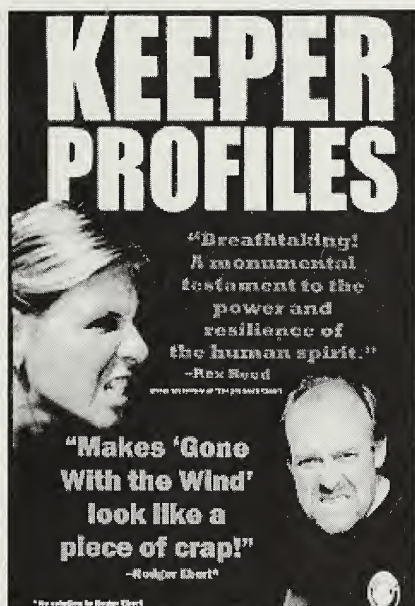
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Kevin R. Shelton, Tampa (FL)
John Jinks, Locust Grove, (OK)

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Wild Adventures Theme Park, Valdosta (GA)
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You've Heard About It!
You've been looking for it!
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Keeper Profiles - The hilarious DVD that combines the original film clips that dissect the personalities of your fellow keepers with outtakes and other footage. Produced by the Southern Ontario AAZK Chapter, all profits from the sale of this DVD go to support AAZK, Inc. and its projects and programs.

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Order from the AAZK website at www.aazk.org (under Shop on the homepage) OR purchase with Visa or Mastercard by calling the AAZK Administrative Offices at 785-273-9149.

COMING EVENTS

Post Your Upcoming Events here — e-mail shane.good@azk.org

NATIONAL ZOO KEEPER WEEK July 15-21, 2012

July 25 - 28, 2012

The 35th International Herpetological Symposium

Hosted by Catoctin Wildlife Preserve and Zoo at the Ramada BWI Airport in Hanover, MD. For more information go to kingsnake.com/ihs.

July 29 - 30, 2012

The 2nd Venomous Animal Safety and Husbandry Training Seminar

Hosted by Catoctin Wildlife Preserve and Zoo in Thurmont, MD. For more information contact Rick Hahn at rickhahn@CWPZoo.com.

August 8-14, 2012

The World Congress of Herpetology

To be held in Vancouver, Canada. For more information see worldcongressofherpetology.com.

August 16-19, 2012

The 10th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles

Tucson, AZ. Hosted by the Turtle Survival Alliance and the IUCN Tortoise and Freshwater Turtle Specialist Group. For more information go to turtlesurvival.org.

September 9-13, 2012

4th International Congress on Zookeeping

Sponsored by Wildlife Reserves Singapore/ Singapore Tourism Bureau. Theme: "Many Voices, One Calling". For info on sponsorship or exhibit opportunities e-mail eo@aszk.org.au. Check the ICZ website iczoo.org for latest news/information.

September 23-27, 2012

AAZK National Conference

Hosted by the Rosamond Gifford Zoo and the Rosamond Gifford Zoo AAZK Chapter in Syracuse, NY. For more information see rgzaazk.org.

October 12-15, 2012

From Good Care to Great Welfare: A Workshop Designed for Animal Care Professionals

Presented by the Center for Zoo Animal Welfare, Detroit Zoological Society. A unique four-day workshop for animal care staff working with captive exotic animals. The workshop is designed to help participants better understand animals' perspectives and experiences, address the challenges captivity imposes on animal welfare, and develop the skills necessary to assess and improve overall well-being. Exercises and experiences are immersive and designed to help us understand captivity from the animals' point of view. Limited scholarship opportunities available.

For information contact: Elizabeth Arbaugh, Animal Welfare Manager, Detroit Zoological Society, Tel: 248-398-0903 x3643, E-mail: Elizabeth@dzs.org or visit czaw.org.

NATIONAL CONFERENCES

AAZK

2012 - Syracuse, NY - September 23-27
2013 - Asheboro, NC - September 22-26
2014 - Orlando, FL - September 8-12

azk.org

AZA

2012 - Phoenix, AZ - September 8-13
2013 - Kansas City, MO - September 7-12
2014 - Orlando, FL - September 12-17

aza.org

ICZ and IRF Announce Opportunity to See Asian Rhinos: Earth's Most Threatened Land Mammals

International Congress on Zookeeping Pre and Post-Conference Tours to Visit Ujung Kulon, Bukit Barisan Selatan, and Way Kambas National Parks

- ICZ Pre-conference tour: 28 August – 8 September 2012
Led by Dr. Susie Ellis, International Rhino Foundation
- ICZ Post-conference tour: 14 September – 23 September 2012
Led by Kerry Crosbie, Asian Rhino Project
- Maximum 6 participants per trip
- Cost: US \$2,100 per person*

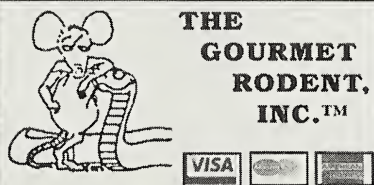
**For Further Information, please contact Dr. Susie Ellis at s.ellis@rhinos.org
To see the full brochure, please visit the ICZ website at iczoo.org**

*double occupancy – includes all activities, airfare from Singapore to Jakarta, Jakarta to Bandar Lampung, all in-country transportation, accommodations, park fees, meals and non-alcoholic beverages. Excludes alcoholic beverages, laundry, and other personal expenses. Single supplement is US \$400.



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P.O. Box 430
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Perspectives on Poaching: A Park Guard Story

By Gay Edwards Reinartz & Steven Seyfert
Bonobo and Congo Biodiversity Initiative



A bonobo at the Milwaukee County Zoo. *Photo courtesy of Richard Brodzeller.*

We often hear about the forces of corruption and complicity of political leaders that stoke both the supply and demand side of the trade in animal products. We rarely hear from the people who try to combat poaching. It is, therefore, my purpose here to recount a simple story, much as it was told to me in 2010 by a park guard in the Salonga National Park. I would like to present the perspective of the guards whose lives are on the line and who are often the only thing standing between species survival and extinction.

This story takes place in a small corner of the world, but it reflects a widely spread phenomenon across much of Africa or *anywhere* where animal products are worth money, either as food, pets or decoration. Most hunting is done for profit, even though some of the less valuable pieces may go to feed the hunter's family. I am often asked to describe the phenomenon of poaching, so I offer an analogy that people in my home state can appreciate:

In Wisconsin, white-tailed deer (*Odocoileus virginianus*) are protected from poaching. It is only legal to hunt them during tightly controlled seasons, and vast resources go to prevent over-hunting. Yet, *if* law enforcement were to relax, and *if* the profit from venison were to become competitive with beef, then one logically could expect more poaching and even a black market in venison. Adding to this: *What if deer antlers were made from gold?* At that point, the Wisconsin deer population would need the help of the National Guard to survive. That's how it goes with rhinos and their horn, elephants and ivory. The stakes rise dramatically as the end price of rhino horn and ivory rocket towards that of precious metals. Combine this with systemic poverty in once wildlife-rich nations, the growing demand for ivory as the Asian middle-class grows, corruption and the mafia-like networks of smugglers, thugs and gun-runners. We may be witnessing the perfect storm for extinction of many large mammals, notably elephants in this story. It is within this context that national park guards work.

Located in the heart of the Democratic Republic of Congo is the Salonga National Park. At almost 14,000 square miles, the Salonga is Africa's largest forested park and a UNESCO World Heritage Site. It holds the distinction of being the only national park in Congo currently designated for protection of the endangered forest elephant (*Loxodonta cyclotis*) and the rare, endemic great ape, the bonobo (*Pan paniscus*). Like many parks and wildlife reserves in central Africa, the Salonga is chronically understaffed and lacks the resources needed to enforce conservation laws and protect wildlife in a park larger than the state of Maryland. The greatest threat to elephants, bonobos, and all wildlife there is commercial poaching for the bushmeat and ivory trade. Poaching is done by two classes of people. There are local citizens trespassing into the park to hunt with traditional means (snares and arrows) or homemade shotguns. Then there are elephant hunters: well-armed gangs of up to ten men, ferried in motorized canoes, who carry military-style weapons and enough ammunition to last for months. The elephant poachers usually come from the large cities traveling from as far as 500 miles away. They often work in collaboration with locals who know the forest well and who supply them with information and local food. Poachers in the Salonga may target elephants, but because the men are paid in shares of meat, they hunt indiscriminately. Crocodiles, birds, monkeys, forest pig, various species of antelope, and bonobos are among their grisly cargo.

For the past 15 years, the Zoological Society of Milwaukee (ZSM) has operated its Bonobo and Congo Biodiversity Initiative (BCBI) - a field-based bonobo and biodiversity conservation program - from Etate in the park's northern sector. A converted poaching camp, Etate is both a research station and a park patrol post.

Nine guards employed by the ICCN (Congolese park authority) and supported by the ZSM are stationed at Etate. For more than a decade, they have worked diligently to protect the sector's bonobos (~500) and a small population of highly-threatened forest elephants. Poaching in the national park, however, is a looming threat. Furthermore, over the past two years, elephant poachers have installed themselves in remote locations where the elephants tend to congregate, namely at river baths and saline bays. Until recently, poachers had taken control of the Yenge River not far from Etate. Guards from Etate try to patrol the Yenge, and in July 2010, three of them were reminded of the high risk of their profession and of the ruthlessness of poachers who will use any means necessary to fill their quota of meat and ivory. (The names of all the individuals in the following story have been changed to protect them against persecution.)

The Incident on the Yenge River: A Report by *Chef de Poste de Patrouille (PP) Etate*:

On July 16th, 2010, three guards of the Salonga National Park set out from their patrol post, Etate, to paddle a pirogue (a dugout canoe) and deposit it at a camp on the Yenge River. The Etate guards patrol a strip of land between two rivers, the Salonga and Yenge, an area of about 200 mi². If they could deposit a small pirogue on the Yenge side, after crossing the patrol area on foot, the guards could simply paddle back to the patrol post and save their legs. Towards that end, Dunba, *Chef PP*, ordered a small team to relocate the pirogue and hide it somewhere along the Yenge River between two well-known camps, Camp *Ministre* and Camp *Golgotha*. The operation was to take three days.

The weather was sunny when Guards First-Class Manaisa Geri, Sasekwa Bola, and Ngoy Edza launched their mission, paddling down the Salonga River from Etate for one full-day. They spent an uneventful night at an abandoned fishing camp on the Salonga near the confluence of the two rivers. The next morning, they entered the mouth of the Yenge River at 8:50 a.m.

(The Yenge is wild. It is beautiful. It harbors a bounty of wildlife, and like a mother, it is a source of uncommon mammals, birds and fish that populate the region. It is here where we find most signs of elephants. While journeying up this river, it is not unusual to see a large crocodile sunning itself on a log. Monkeys clamor close to shore; even the shy Allen's Swamp Monkey (Allenopithecus nigroviridis) frequents the river banks. Otters sometimes dart before our canoe, and endangered gray parrots (Psittacus erithacus) and fishing eagles (Haliaeetus vocifer) sail overhead. Over its entire course, the Yenge is inside the park. Sadly, the park has no patrol post anywhere along its length, and thus, poachers go unimpeded after elephants and other animals – wildlife is a resource free for the taking as long as you don't get caught. Fishing was banned on the Yenge in 2006, but enforcement of this policy is erratic and seldom. Unauthorized park personnel sometimes issue fake fishing permits in order to scam a few francs in "tax" money. At worst, the fishermen collude with the poachers: they sell them their fish, and they give information on the whereabouts of the park guards.)

Led by Geri, the trio of guards made their way slowly upriver, paddling against the current. Spotting smoke rising through the high canopy of trees on the shore, the guards paddled over to investigate.



A Male bonobo at Etate. Photo courtesy of Dr. Gay Reinartz

They arrived at a freshly made camp occupied by four fishermen. Geri asked who authorized their presence in the park, and immediately the men produced an official looking paper, ostensibly an authorization from the park's main station. Geri, knowing the permit was a forgery, confiscated it in order to later report it to his superiors. Then the guards departed, leaving the fisherman with the benign warning that it was illegal to fish on the Yenge. Not one fisherman spoke about the presence of poachers that they surely knew were camped ahead.

The guards continued their journey upriver, traversing territory as familiar to them as the faces of their babies. They passed the grove of *Pandanus candelabra*, a spinney herbaceous monstrosity that harbored thousands of squeaking fruit bats roosting in the folds of its fleshy leaves. Placidly paddling along, the group rounded three large bends in the river as they neared the camp they call *Bonkengela*. At this point, the river surged around the final bend and tossed their small pirogue out into the open water of the main channel. There were no trees to hide their advance. In the flick of an eye, guards and poachers alike made the same discovery: Each was less than 50 meters away from the enemy in open view. In an instant, the guards knew that they were in the sights of the *grand braconnier d'éléphant*, Tento.

(Tento is a name that has circulated around these parts for many years. It is a nickname belonging to a careful, experienced professional who knows his business. Other than the fact that he hails from the city of Mbandaka, 400 miles away from the Yenge, not much is actually known about him. Like other big poachers, he has a reputation that is one part truth and three parts legend. The legends make him dangerous. There are many smaller guys who imitate Tento, who desire to have his skill, his anonymity and his power. It is frequent that during our wildlife surveys in the Etate region, we come upon a tree or a log with the name Tento carved deep into the bark, perhaps marking his camp, but more likely marking a tribute to him. It would be impossible for Tento to do all the killing that he has allegedly done or be in all the places that bear his name. According to a small cardboard message found by the guards, attached to a tree and signed "Tento," Tento has even come to symbolize the takeover of the park on behalf of the local citizenry. The real Tento does not waste time writing notes or looking for trouble.)

Tento, commanding a crew of six men armed with military-style weapons, ordered the guards at gunpoint to come forward. Guard Bola tried stealthily to reach for a gun that lay at his feet on the floor of the pirogue, but Geri, never taking his eyes from Tento, said, "No, keep still."

Tento shouted, "I'll shoot all of you if anyone makes a move. Raise your arms, keep your hands in the air, and one of you paddle the pirogue over here to us." Obediently, the guards entered the enemy camp at *Bonkengela*.

From his chair, Tento ordered the men of his small army to surround the guards. "Why are you pursuing me?" he demanded.

Assessing their slim odds, Geri replied, "We are not pursuing you. We are researchers who look for bonobos, and we are *en route* to deposit this pirogue at a camp."

Tento countered, "Why, then, do you have two guns in your pirogue?"

"We carry them to use against dangerous animals in the forest. We do not follow you," said Geri truthfully. "We do not follow you nor did we know you were here."

Tento knew these men were guards. He ordered one of his men to put his gun against the side of each guard's head and shoot off rounds next to their ears. Deafened and rattled by the noise, the guards trembled and begged their captors to be reasonable. Tento then commanded them to take off all their clothes, and once stripped, to lie naked, face-down in the black dirt of *Bonkengela*. Tento next ordered the beating. The poachers chose a branch two inches in diameter and spiked with inch-long

thorns. Because he had reached for the gun in the floor of the boat, they first beat Bola mercilessly across his shoulders and down his backside. Next they beat old Edza and lastly turned their fury on Geri. The guards' screams must have been heard by the fishermen three bends downriver. Yet no one came, not even out of curiosity. Everyone here knows better than to pursue Tento.

After the beatings, Tento stepped up and said, "This is the point at which I cut off your d*cks using your own knife." He mused over the knife that he had confiscated from Geri; he ran his thumb along its finely honed edge. "Turn over."

Geri, bloody, pleaded, calling out his name, "Tento, don't you remember me? Years ago, *mon konzi*, my father gave your father a *potamochere* [a forest pig] – a baby this high that we had taken near here. Do you not remember me?" Tento remembered; he recognized Geri.

He raised a hand to his men while looking at Geri. After some minutes he simply said, "Leave." Turning to the disbelieving Edza and Bola, Tento repeated that they were free to go. He said that he had decided to spare their lives because of the wisdom of Geri. Geri had found a way through the brutality to touch Tento.

Taking only their clothes to cover their bloody backs, the guards staggered from the camp and fell into their pirogue. Tento kept their pots, backpacks, guns, knife – all but their GPS units. These he threw disdainfully into the pirogue. He shot a parting warning to the retreating guards: "I know that you are guards and that you have few guns. I know that you are given only four cartridges per gun. You have no force. Instead, I have three pirogues, two motors and look here, five AKs and 3000 cartridges! Look at all this! Let it be known that you are no match for us!"

Barely able to move, the guards drifted down the Yenge away from the nightmare of camp *Bonkengela*. They arrived back in Etate two days later. Geri's courage finally failed him when he arrived in the safety of Etate and saw his old friend Chef Dunba; he dissolved into a heap of tears, unable to speak. Dunba gravely listened as Bola and Edza told their story. He took photos of their wounds. No one could believe their ordeal, and no one could believe the miracle of their survival. No one slips Tento.

Note: Thankfully, the story of Geri and his team does not end here. They continue to go out on patrols, guard the Etate sector, and even patrol the shores of the Yenge. All except Bola, whose cuts were deepest, went out on patrol again five days after their traumatic event. They are alive today because of the one-time clemency of a gangster. This time the Etate guards survived. Their deepest scar is knowing that there may be a next time when Tento is around the bend.

For the rest of that year, Tento's band worked up and down the Yenge, killing an untold number of elephants. The same scenario was playing out in other parts of the park. The level of poaching was unprecedented. With the financial help of international organizations, namely ZSM, World Wildlife Fund, and RAPAC (Protected Areas Network in Central Africa), the park authorities organized special patrols to invade poaching strongholds. During the next six months, at least seven poachers were apprehended in the Etate area alone. Finally, perceiving the need to suppress the potential of a local rebellion in the region (thus reduce the stockpile of illegal weapons), the national Congolese government sent 300 of their soldiers to join the Salonga park guards in October 2011. This joint action was named Operation Bonobo. The guards and military systematically rooted out many local and external poachers and secured most of the Yenge.

Operation Bonobo continues today. The Etate guards have regained their confidence. Yet they are aware that as the tally of arrests and seizures mount, the name of Tento is conspicuously absent. They can never completely rest. The war on wildlife will not end as long as the stakes are this high. We might employ different approaches to save these key species, but we will continue to call upon the guards to do the impossible. They need to know that the world is aware of their work, that their work is worth doing, and that the world cares about them. They are our front line of defense against extinction.

Please consider a gift to the ZSM's Bonobo & Congo Biodiversity Initiative

The ZSM helps Salonga park guards combat poaching through surveillance training, communication and field equipment, and logistical support for their patrols. Etate, in the northern sector of the Salonga National Park, is one of the most active and advanced patrol posts in the park with frequent, systematic patrols covering a 200 square mile area and protecting over 500 bonobos and a remnant population of forest elephants.

To support the guards in the Salonga National Park, please consider a gift to the ZSM's Bonobo & Congo Biodiversity Initiative (BCBI). Your generous contribution will be used for park guards at the Etate Patrol Post for food stocks and rations, supplies (boots, tarps, batteries, pens, medicines, mosquito netting, etc.) and equipment (GPS units, compasses, backpacks, flashlights, etc.). All donations go directly to support of the park guards in Congo.

Please make checks payable to:
ZSM—BCBI Program

You can also make a secure online credit-card gift at:

zoosociety.org/shop/conservation

Please identify your gift for "Bonobo Conservation" and write BCBI in the comment section.

Send your contribution and direct questions to:

Bonobo & Congo Biodiversity Initiative

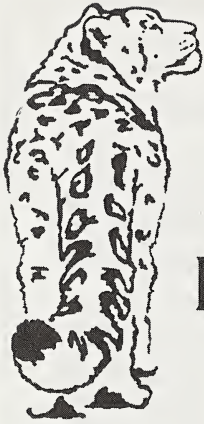
Zoological Society of Milwaukee

10005 W. Blue Mound Road

Milwaukee, WI, USA, 53226

Phone: (414) 276-0339/e-mail: conservation@zoosociety.org





An update from one of our Conservation Partners, the Snow Leopard Trust

Snow Leopard Trust

Founded in 1981 by the former Education Director of Seattle's Woodland Park Zoo, Helen Freeman, the Snow Leopard Trust's mission is to protect the snow leopard and its mountain ecosystem through a balanced approach that addresses the needs of local people and the environment. With only 4,000-6,500 snow leopards existing in the wild, this flagship species is categorized as Endangered in the Red Data Book of the IUCN (International Union for Conservation of Nature).

One of the Trust's earliest successes was helping Zoos create a captive breeding program so snow leopards would no longer be taken from the wild. Since then, the organization has focused exclusively on protection of snow leopards in the wild. Today, we support more than 30 staff members working in six countries (China, India, Mongolia, Kyrgyzstan, Pakistan and the United States) implementing and continuously refining the Snow Leopard Survival Strategy through an integrated system of education, research, and grassroots community-based conservation.

One of the greatest threats to snow leopards across their range is retribution killing by herders protecting their livestock. In many cases, a household or small community can be economically devastated by predation, leading to snow leopard persecution. In India, between 1996 and 2002, herders reported killing 16 snow leopards, and in Mongolia in 2002, of 116 herders interviewed, 14% admitted they had hunted snow leopards. In northern Pakistan, many communities feel snow leopards should be reduced or eliminated and in 2010-2011, rural herders near Central Karakorum National Park killed two snow leopards.

The Trust has found that without tangible economic returns, communities in snow leopard habitat are unwilling or unable to adopt conservation-friendly practices. Over time, misunderstanding and intolerance towards predators increases, which can lead to a population decline of this endangered cat. However, with support, all of our supporters, including members of AAZK, the Trust is making strides to break this negative cycle.

2012 is going to be a very exciting and productive year for our conservation initiative. The Trust will provide communities in snow leopard habitat with an integrated suite of conservation programs including: **Economic development** programs to help herders offset the costs associated with living alongside predators, **conservation education** to build greater understanding and appreciation for snow leopards and their habitat; and **rigorous research** to improve and expand our knowledge of snow leopard ecology and behaviour so that we can grow our conservation initiatives.

1). Economic Development: We will manage three programs: *Snow Leopard Enterprises* helps herders make and sell high-quality felted products; *Livestock Vaccination Program* connects herders to life-saving livestock vaccines; and *Livestock Insurance Program* enables herders to insure their valuable livestock and compensates families for insured animals lost to snow leopard attacks. These programs are linked directly to snow leopard conservation through Conservation Contracts in which participants agree to protect snow leopards from poaching or retribution killing in return for the economic benefits they receive.

In northern Pakistan, we hope to initiate the vaccination program in villages within the Central Karakorum National Park buffer zone so that we can begin establishing a larger conservation presence in this critical region. We also have expansions planned for Kyrgyzstan. In 2009 we put Snow Leopard Enterprises on hold in Kyrgyzstan while we reviewed conservation threats to snow leopards. We have since determined

that the program can continue to benefit the country's cats, and in 2012 we plan to reinstate it and reach out to more families.

2). Conservation Education: We will lead activities that reconnect children in snow leopard habitats with nature; provide resources to help teachers incorporate environmental education into their curriculums; and educate officials (park rangers, environmental inspectors) on snow leopard research and wildlife monitoring.

In 2012, we plan to take at least 140 children in India on eco-camp excursions in the Himalayas to experience nature first-hand. We will also work with over 20 schools in India to host environmentally-focused events. We are also excited to begin expanding these models to Mongolia, where we just hired our first Mongolia Education Coordinator.

3). Research: Working with communities and national and international researchers, we will collect data on snow leopards (basic ecology, population dynamics, etc.) as well as people (livestock predation rates, resource use, etc.) to evaluate our methods and plan our conservation strategies.

We will continue our long-term snow leopard study, which includes tracking snow leopards using GPS radio collars as well as monitoring snow leopard populations using remote-sensor cameras. In Mongolia, we will train local community members to use simple tracking sheets to help us collect basic data about snow leopards and prey. In addition, we plan to conduct extensive research in Qinghai Province, China to determine the best possible strategy for initiating community-based conservation programs in the area.

Overall, through these efforts, we hope to:

- Engage at least 1,500 households in snow leopard conservation, and
- End poaching and retribution killing of snow leopards in program communities

Thank you for all the work you do to increase awareness of this endangered species. We are grateful to have AAZK as a partner, and together it is our mission to ensure that the snow leopard reigns on its mountain habitat for generations to come.

For more information about the Trust, or to find out how you or your zoo can get involved please visit our website at snowleopard.org, or contact Marissa Niranjan at marissa@snowleopard.org.



Snow leopard. Photo courtesy of Anne-Marie Kalus (Flickr: Ami 211)

Observations on Eco-tourism and Conservation in India

By Bob Berghaier, Ex-Zookeeper
Tour Consultant, Premier Tours
Philadelphia, PA
bobb@premiertours.com



Tiger in Bandhavgarh National Park, *Photo by Dr. Robert Singer*

From 4-20 December 2010, I was in India looking at the eco-tourism potential of the Madhya Pradesh (M.P.) “**Tiger Circuit**” – Pench, Kanha, Bandhavgarh, Panna Reserves and Assam’s Kaziranga National Park. My tour was arranged by an Indian in-country tour operator – **Royal Expeditions** royalexpeditions.com. Royal Expeditions is an exceptional company and our trip operated flawlessly. They have an extensive knowledge of the wildlife of their country and have had a long history in Indian conservation. Their trip pre-departure information on the wildlife and the ecology of each area visited is extensive and at times was like reading someone’s academic dissertation.

On arrival in India in the early morning of 4 December 2010, my traveling companion Dr. Bob Singer and I passed through the Delhi’s new airport. It is a very modern, clean facility. However one still has to clear Indian immigration that is not well-organized and can move at a snail’s pace. We got to our hotel just before dawn. On the morning of 5 December 2010 we flew from Delhi to Nagpur on a local Indian airline, **Indigo**, whose check-in, in-flight service and aircraft were quite good. If you have not flown internally in India for some time, the level of security may surprise you. To even get into the airport you have to show an actual air or e-ticket as well as a form of identification with photo. For non-Indian travelers a passport is mandatory. At check-in your domestic airline has to

tag each piece of your carry-on at check-in before you go through a security screening including an x-ray bag check and passing through a metal detector. After this, each tag on your carry-on has to be stamped as checked by security. Before boarding your aircraft there is a final check to make sure that each of your carry-on items has the required stamped tag. If your item doesn't have a stamped tag it is confiscated.

Our flight departed Delhi on time and arrived in Nagpur two hours later. We were met on arrival and set off on our first Indian road adventure. The drive was 95km [59 mi.] and took just over two hours. In my 31 years of overseas travel I've been driven in some incredible places – eastern Congo, Madagascar, Jakarta, Accra, northern Kenya, the Pan American highway in Peru and the Ecuadorian Andes. None of these wild and woolly places prepared me for being driven on the roads of India. With heavily decorated trucks bearing down on you, big buses with the drivers leaning on their horns to chase you out of their way, the motorcycles and mopeds, bicycles, motorized and man-pulled rickshaws, indifferent to traffic, Indian pedestrians, herds of driven cattle, lone stray cattle, goats, sheep and a pariah of dogs all on the road at various times and in some sections all on the road at once, made this a never-ending kaleidoscope of fascinating sights and close-call collisions. Within the first few hours I was convinced that the hardest working and most skilled person on the entire Sub-Continent must be the professional Indian Driver!

Traveling on the road this day, however, got me two life mammals – Hanuman langur (*Semenopithecus entellus*) and rhesus macaque (*Macaca mulatta*). I saw both species on several occasions while on the roads in forested areas in Madhya Pradesh outside the Reserves. I was told that the macaques in particular are often fed by passing truck drivers, many of whom are Hindu devotees of the monkey god – Hanuman, which makes the rhesus the more commonly seen wild primate on the roadside.

Our first stop on the Circuit was Pench National Park. In India, each State administers their own conservation areas and the level of protection and management are more determined by the State government than any national authority. The Madhya Pradesh (M.P.) Tiger Circuit is four National Parks. The southern-most is Pench, followed by Kanha, Bandhavgarh, and Panna in the north. Each Reserve is a four to six-hour drive from the other. Each Reserve and each entrance gate to the Reserves has a specific number of vehicles that are allowed in each day. I was told by the Indian naturalists I met that during the busiest times of the year for the Reserves – the last two weeks of December, the first two weeks of January and the month of April – pre-booking your game drives as far in advance as possible is strongly suggested. You are allowed in the Reserves for morning game drives starting at sunrise (about 0630hrs this time of year) and one has to depart by 1000hrs – Bandhavgarh, 1100hrs – Pench and Panna, 1130hrs for Kanha. You can then have an afternoon drive, which starts at 1500hrs, and you must vacate each of the Reserves by sunset (approximately 1800hrs in December).

The Reserve authorities believe that the hours between game drives gives the wildlife a respite from the motorized tourists. Having a great deal of experience in African eco-tourism, this is in marked contrast to the African conservation areas I have visited. In Africa, if you wish, you could start at dawn and not have to leave the reserve or return to your lodge/camp until dusk. On each game drive on the Circuit a local guide must accompany you. This is now official policy in M.P. created by the State Parliament as a way for local men to get some income from the Reserves they live adjacent to. In theory, this policy should help build local support for the Reserves. The local guides earn 200 rupees (a bit less than \$5.00 USA) per drive + tips. It was quickly obvious that the skill and language level of each of these men varied. Some were much better than others but I tipped all of them a bit and the better ones who found tigers, or who knew their species of birds well, I tipped more – up to 200 rupees, doubling their normal stipend.

I stayed two nights at the Pench Jungle Camp Lodge and Tented Camp. This was a good introduction to the Circuit. The Pench Jungle Camp has a 30-acre Eco-park nearby where one can do a night walk or day-birding trips. The Eco-park is adjacent to Pench N.P. and according to my guide, naturalist

Pahhir Patil, at least once per month a leopard (*Panther pardus*) or tiger (*Panthera tigris tigris*) makes a kill here. A night walk with Patil turned up Indian flying fox (*Pteropus giganteus*), and what I am convinced by its flight pattern and white belly was a big-eared horseshoe bat (*Rhinolophus macrotis*). Temperatures in December at night range between 40-50°F [4.4-10°C] resulting in poor mammal viewing on this particular visit. However, having this much area for birding walks or night mammal spotting should make Pench Jungle Camp a preferred accommodation for the serious naturalist.



Tiger in Bandhavgarh National Park, Photo by Dr. Robert Singer

We had three game drives with Patil in Pench and although we were close to at least two of them we never saw a tiger there. However, it was here that I first experienced how the local driver/naturalist/forestry guides most frequently find tigers. They listen to alarm calls of the deer, langur and peafowl and stake out an area, waiting for a tiger to appear. Once you know what sounds to pay attention to, one can follow the trail of the tiger or other larger carnivore as they move through the forest. This method must work well when the vegetation is not as thick and full as it is in December or the other post-monsoon months of October, November and January. Each of the Tiger Circuit naturalists I talked with felt that the best month for tiger viewing in their reserves was February and March. It is then that the vegetation was open enough (cleared mostly by herbivore grazing/browsing) to more easily see the cats after they were located by listening to the alarm calls. They all felt that in April there were more local Indian tourists which made the reserves too crowded and getting game drive reservations more difficult. In May and June the weather is so hot that tigers tend to move around less during the limited hours the reserves are open to tourists making sightings more difficult. Looking for tigers reminded me of looking for leopards in Africa. You need to have a driver/guide/naturalist that uses good tracking skills and has knowledge of the habits of the cats, combined with some luck in getting the opportunity to see them.

Pench is primarily Sal forest, but a large reservoir occupies a good part of the Reserve, which adds to the diversity of bird life, making it a good destination for birders as well as mammalogists. Since Pench was my first Indian game viewing I got a few new life mammals there including spotted deer (or chital) [*Axis axis*] – very common and at a very high density, nilgai (*Boselaphus tragocamelus*) – this antelope species reminded me very much of the African eland; three striped palm squirrel (*Funambulus Palmarum*); and only one gaur (*Bos gaurus*) – a single male that was sparring with a small tree. We also saw several sambar deer (*Cervus unicolor*) and a few golden jackals (*Canis aureus*) as well as both Hanuman langurs and rhesus macaques.

Pench may have as many as 50 adult tigers. Patil and the other naturalists I spoke with at Pench thought that the tiger population is doing well in Pench and is increasing. One naturalist I spoke to in Kanha was not so sure about this since he speculated that the large spotted deer population was perhaps an indicator of a low tiger population. In any case, one section of the tourist area of the Reserves that we were assigned was recently closed because a female tiger had given birth to four cubs. Other large carnivores seen with some frequency in Pench include leopard, sloth bear (*Melursus ursinus*) and Asian wild dog or dhole (*Cuon alpinus*).

Dholes are seen with some regularity here. A pair was seen a week before our arrival. The Tiger Circuit naturalists I talked with have noticed a pattern with dhole sightings in their respective reserves. According to their observations dhole numbers seem to be cyclic. Pairs or trios are seen infrequently at first. Then the number of animals per pack increases up to a dozen or more for a few years and then the species disappears usually after a heavy monsoon season until it comes back with a pair or trio restarting this population boom and bust cycle again. The naturalists suspect that canine distemper causes these population crashes. With the number of feral dogs I observed on this visit to India I am not surprised that distemper or even perhaps rabies can spread quickly into a wild population of canids. A similar domestic canine to wild canid disease transfer is believed to be the cause of the local extinction of African wild dogs (*Lycaon pictus*) in the Masai Mara in Kenya in the late 80's early 1990s. The tiger is certainly the main conservation mission of the M.P. Reserves, however, there is also reason for concern about the State's dhole population.

In the morning of 7 December 2010, after our last Pench game drive we departed by road to Kanha Reserve 200km [~125 mi.] to the north. Another Indian road adventure of five-plus hours got us to the Kanha area. Our lodge for the next two nights – the Kanha Earth Lodge – is located in the buffer zone west of the Reserve and is part of the Indian Jungle Lodge Company – Pug Dundee Safaris. Pug Dundee has lodges in Panna, Bandhavgarh and Earth Lodge is their newest, most modern-looking facility. It reminded me very much of some of the African game lodges that I have seen. Each Pug Dundee Lodge has its own team of naturalists. Those I met were very good and I learned a lot about Indian wildlife and the management of the Tiger Circuit Reserves from them. Pug Dundee also purchases or leases land around its lodges, which become small, private reserves. On my first afternoon at Earth Lodge I saw a small carnivore from the porch of my room, which moved away before I could get a good look at it through my binoculars. From how it moved and its coloration, a jungle cat was my best guess. Although the Lodge is a half-hour from the Reserve entrance gate, the drive is interesting and in the early morning hours it becomes a predawn game drive. I was told that during the warmer months wildlife is often spotted enroute, especially reptiles, and once a tiger was seen.

The most experienced naturalist at Earth Lodge was an enthusiastic young Indian – Harsh. Through Harsh I was the first Lodge guest to do a night drive out of the Lodge into Kanha's buffer zone. I did two drives, each lasting up to two hours. The route passed through open community land, fields and rice paddies and ended up on a river that borders the Park. It was cold at night so animal sightings were limited although I saw jackals, spotted and sambar deer, one little Indian field mouse (*Mus booduga*) and on both nights a small wild canid that moved and looked like an Indian fox (*Vulpes bengalensis*).

We had three game drives within Kanha, two mornings and one afternoon. Before you enter the Reserve you pass a small colony of Indian flying fox in a huge tree in the village of Khatia. Kanha is the largest Reserve in the Circuit and is a mix of Sal forest interspaced with grasslands meadows. The meadow most central and frequently visited by tourists is Kanha Meadow where Dr. George Schaller did his study of Indian predator/prey relationships summarized in *The Deer and The Tiger* published in 1967. The park also has highland forest with thick stands of bamboo that reach up to a high plateau that is 2,900 ft. [~884m] in elevation. We did one drive here to look for the four-horned antelope or chowsingha, which we did not find, but saw instead a small group of ruddy mongoose (*Herpestes smithii*) and an Indian muntjac or barking deer (*Muntiacus muntjak*), and our first wild boar (*Sus scrofa*). In the lower elevations spotted deer were common, as were langur. Jackals were frequently seen as well as sambar and four gaur. We also saw swamp deer or barasingha on every game drive. These are the hard ground swamp deer (*Cervus duvauceli branderi*). During the 1970's the population of these dropped to only 60 individuals. A concentrated breeding program using a core population protected by a predator-proof fence, is one of India's best conservation success stories. As of June 2006 the estimated population is over 1,200 individuals and the subspecies is believed to be extinct in the rest of the country.

Kanha is also where I saw my first tiger, a lifetime goal for this ex-big cat zookeeper. It was on our 2nd drive in Kanha (our 5th overall). We were just heading back after an uneventful afternoon of wildlife viewing when on a narrow forest road ahead was a row of nearly a dozen stopped vehicles. The word filtered down to us that two tigers (male and female) had been seen on the road before moving off into the forest. Our forest guide quickly showed that he knew what he was doing by directing our driver into a position that allowed a short but very clear look at a large male tiger. It was just a glimpse but produced an incredible rush of excitement in everyone who saw it. These were the only two tigers seen in this section of the Reserve that day. A June 2006 survey in Kanha reported 133 tigers within the Reserve. Some local naturalists believe that the population now may be as low as 40 adult individuals. They point to several trends, fewer tiger being seen recently and more sightings of leopards and jackals. Tigers that leave the Reserve are sometimes poisoned due to predation on cattle. Our naturalist also believed Kanha is not as well-watered a Reserve in comparison to Bandhavgarh. The limited number of water sources could increase tiger to tiger aggression with resultant fatalities during the dry, hot months of May and June. The best place to see tigers in the Reserve appears to be Kanha Meadows. A tigress with three cubs was observed there on our last drive in the park. Upon my return I reread *The Deer and The Tiger* and found that Schaller also recorded a female with three cubs here over 40 years ago. In retrospect, an indication of the presence of tigers were the several species of vultures and scavenging species of eagles that we saw around the meadow as well as numerous jackals.

It was then on to the 3rd Reserve on the Circuit – Bandhavgarh. The drive is 250kms [~155 mi.] and for us took six hours. Due to our late departure from Earth Lodge we arrived at our accommodation, Kings Lodge, after dark. Although we arrived safely I would highly recommend not driving at night on Indian roads. Kings Lodge is located near the Reserve's northern boundary and the Tala entrance gate, and is located within the Reserve's buffer zone. It is a comfortable Lodge with good accommodations and common areas. Our naturalist here was Karan Rana, an ex-pat Nepalese who previously worked in Chitwan Nepal's Tiger Tops Lodge. He had a wealth of knowledge about the wildlife of both India and his native country. From the other Pug Dundee naturalist I discovered that Karan had trained them all. Pug Dundee also has a nearby lodge adjacent to the Reserve boundary – Tree House Hideaway. Tree House is located right along the Reserve boundary. It is surrounded by a private reserve that has good bird and mammal sightings although the possible presence of Euro-Asian wild boar means that you need to be escorted by a lodge guard during dusk to dawn hours. The Tree House also has a waterhole with a viewing hide. I was told that the waterhole has very good game viewing, particularly during the dry season, especially for leopards that frequently jump the Reserve boundary fence to drink or hunt at the Tree House waterhole. Occasionally from either lodge, wildlife, even wild species of cats both big & small, are seen while driving to the entrance gate in the predawn hours. On the morning of our last drive we saw an Indian hare (*Lepus nigricollis*).

In Bandhavgarh the vegetation in the lower elevations is primarily Sal forest that flanks long narrow grasslands. These grasslands make this Reserve the definitive place on the planet to see a tiger in the wild. We saw seven different individuals. Bandhavgarh is not only for tigers. We saw numerous wild boar as well as good numbers of spotted deer, sambar, langurs, macaques, a few jackals and a pair of ruddy mongoose. In a small human-built cave easily accessed from one of the Reserve's roads, was a colony of big-eared horseshoe bats. Karan told us that elephant-back safaris are no longer conducted in Bandhavgarh because it is now believed to be stressful for the tigers. However, on our second morning in the Reserve a group of Indians, heavily escorted by Reserve staff and police, were assisted with getting on several elephants to get closer to a tigress with three nearly adult-sized cubs. Obviously, for tiger viewing on the Circuit, "rank has its privileges".

Our best look and only photos of tigers were of a tigress with tree cubs of 17 months - two males and one female. This occurred on our 2nd drive in Bandhavgarh (our 8th on this trip). Again there was a line of nearly a dozen vehicles waiting for this quad of tigers to appear. Karen, who was driving, and our accompanying forest guide, passed by this row of vehicles twice as they looked for different tigers. However, they made sure we got back to the location at the time they expected the cats to move and they got the timing exactly right. All four started moving across one of the grassland areas and as we jockeyed for position we got some incredible looks at them. That experience, in my opinion, sums up tiger viewing in all of the reserves of the Circuit. After you see the first tiger the "edge" is off! You can take your time to avoid crowded roads and look for your own tigers. If you can't find tigers on your own, you then go back to the location of the last tiger sighting. In Bandhavgarh we saw tigers on every drive except for our last. And even then, on our last morning drive on the way out of the Reserve, we came across a *National Geographic* film crew led by wildlife photographer Steve Winters. Steve and I had an onsite conversation based on Asian wildlife areas we had both visited and a wildlife scientist that he knew and I had met. He then showed us a photo on his camera of what we had just missed 20 minutes before - a male and female tiger mating alongside the road. An occurrence like this shows that in spite of the tourist traffic in Bandhavgarh, the great cats are relaxed enough to engage in one of their most potentially stressful and intimate behaviors. As I chatted away with Steve we all heard a loud roar, which this ex-zookeeper quickly recognized as a post-copulation tiger growl just out of sight. Steve suggested that we stay here another half hour or so and the tigers would again be on the road. Since we had seen the female of the pair the afternoon before, the male would have been my eighth tiger for Bandhavgarh and my ninth at this point on our trip. However, we needed to drive on to the next Reserve on the circuit - Panna.

The drive to Panna was 195kms [121 mi.] and took four hours. On the mountain passes we saw macaques and large patches of forest. In some lowland areas we saw signs warning of the potential of wildlife in the road, similar to deer crossing signs in the States or the ubiquitous leaping kudu signs of Southern Africa. From Nagpur to here this was the first region that appeared to me to have the potential for good numbers of wildlife outside the formal Reserve system.

Panna once had some of the most easily observed tigers on the M.P. Tiger Circuit. By 2006 (a detailed study is presented in *Oryx* [FFPS] July 2010, Volume 44, No. 3, pages 383 – 389) uncontrolled poaching had eliminated all but one male tiger. This male left for parts unknown, leaving Panna an official Tiger Reserve with no tigers at all! The Madhya Pradesh has since re-introduced a male tiger from Pench and two females – one each from Kanha and Bandhavgarh. The Bandhavgarh female has since given birth to four cubs, two of which still survive. Of the four Reserves on the Circuit, Panna is the second largest and is the most diverse ecologically. Extensive plateaus characterize the terrain of the Reserve along with gorges, with patches of forest and some open grassland areas with species of acacia. The latter were, to me, reminiscent of an African savanna. In addition, the Ken River flows 55kms [34 mi.] through the Reserve south to north. The Ken has a healthy population of marsh mugger crocodiles [*Crocodylus palustris*] (we saw several large ones), turtles and aquatic birds. In Panna you can do game drives, elephant safaris and boat rides on the Ken River. Among the species of animals we saw within the main reserve were Indian gazelle – chinkara (*Gazella bennetti*), nilgai, sambar, spotted deer, wild boar and langur. We also got strong indicators of a nearby tiger kill.

Also seen was a diverse collection of vultures roosting in trees along the road – slender billed and redheaded vultures (*Gyps tenuirostris* and *Sarcogyps calvus*) and Eur-Asian and Himalayan griffons (*Gyps fulvus* and *Gyps himalayensis*) as well as the tracks of a striped hyena (*Hyaena hyaena*). A final confirmation was meeting a team of Reserve tiger biologists who related that all of the above that we saw confirmed that the radio collared Pench male had killed a sambar. If we had more time we would have most likely seen him.

For a serious mammalogist, the Ken River Lodge also offers the only Night Safari in India. Dr. Singer and I were the only participants on the evening of 12 December 2010. The program starts at the Lodge, which you need to reach by 1600hrs. You can store excess luggage here, freshen-up and then meet and transfer to a remote camp located within the Reserves buffer zone. Remote is a relative term since you do travel through some local settlements, fields and past a few Hindu temples. Again, I mention that mid-December is not the best month for animal viewing in Central India. With Pugmark Dundee naturalist Trigun Vir Singh Pathania, however, we saw a lot. Trigun is an excellent birder, serious about his observations, working hard to get each one correct, and is a good overall naturalist as well. We saw three striped squirrel, Indian hares, Indian flying fox, and numerous nilgai, spotted deer, a few Indian gazelles, one common palm civet (*Paradoxurus hermaphrodites*) and two rodents. I missed seeing what I think from the description was a soft-furred field rat (*Millardia meltada*). I did, however, see a large rodent with a clearly distinct white under tail that I believe was a white-tailed wood rat (*Madromys blanfordi*). Perhaps not an ideal evening, by African standards, however, in the months of February and March, Trigun told me that on a two-night stay sighting a sloth bear (*Melursus ursinus*) can almost be guaranteed. The bears are attracted to a type of berry that becomes ripe during those months. Rusty, jungle and leopard cats and striped hyena are also frequently seen on the night drives. The camp itself is very basic but if you are into serious mammal viewing and birding you need to include it on your itinerary. While there I had a long conversation with Mr. Vini Singh, the founder of Pug-Dundee Safaris, about Indian conservation, the loss of tigers in Panna and their reintroduction, and Pug-Dundee Safari's philosophy on community conservation. In what may be one of the most surreal aspects of my India trip, Mr. Singh pointed out that as we talked theoretical conservation, all around us we could hear the noise (firecrackers and banging pots) that local farmers were using to chase wild boars and nilgais (both potential tiger prey) out of fields next to our camp. They do this to save their crops from being eaten, crops on which they and their family's livelihood depends.

In my opinion Panna has the best potential for eco-tourism on the Tiger Circuit. The Reserve is 25kms [15.5 mi.] from Khajuraha International Airport, which makes access from Delhi easy and cost-effective. The Khajuraha Temples are also a well-known international tourist destination, which means a good tourist infrastructure already exists. If the number of tigers can be increased to pre-poaching levels, Panna would be one of those rare places where one could fly into an international airport and have a reasonable chance of seeing a large wild cat in its native habitat within the same day. Kenya's Nairobi National Park is the only other location in which I am aware of (in my experience I have seen lions there in 50 % of my trips into the Park) that this is still possible. From Khajuraha one can be driven (as Dr. Singer and I were) to Jhansi Railway Station (175kms [~109 mi.] three to four hours away) to board an express train to Agra. From there you will see the Taj Mahal, the iconic symbol of India, the very next morning.

My last three nights in India were supposed to be spent in Assam near Kaziranga National Park. Icy conditions at London's Heathrow Airport kept me another night in India but that's not pertinent to this report. As Dr. Singer headed back down to Jaipur for some additional Indian cultural experiences, I continued on to Eastern India. I was joined by the Managing Director of Royal Expeditions - Vishal Singh. Having grown up on a tea plantation nearby Kaziranga, Mr. Singh was a wealth of information about the Reserve and its ecology, along with the conservation and political history of Assam, and a good traveling companion as well. On local Indian carriers we flew first to Calcutta, then to Jorhat. I have a traveler's tip for those planning to visit Assam. If you are flying east ask for seats on the left side of the plane, flying back west, ask for seats on the right side. You will fly along the Himalayan



Indian rhino (*Rhinoceros unicornis*) in Kaziranga National Park, Photo by Vishal Singh of Royal Expeditions



Elephant taxi in Kaziranga National Park, Photo by Vishal Singh of Royal Expeditions

Range and on clear weather days perhaps see Mount Everest. The flights from the west arrive in Assam too late to do any meaningful wildlife observations, but we drove close by a large Indian flying fox colony enroute to our lodge. Our first night was at Wild Grass Lodge. This was at one time the only decent accommodation option for nature-oriented tourists in the Kaziranga area. It is located within a very well-settled area, which was a surprise for me. It is showing its age but as Royal Expeditions states in its description of Wild Grass, it has eccentric charm. The slow service is evidently typical of Assam, but the dancing performance of local villagers more than made up for this. The Lodge assigned Jutin, who was the best local naturalist that I had in Assam.

Our first drive was in the central Kaziranga. Vishal and I went on a one-hour elephant-backed safari in which I saw four life mammals – Asian one-horned rhino (*Rhinoceros unicornis*), Asian elephant (*Elephas maximus*), hog deer (*Axis porcinus*) and wild buffalo (*Bubalus arnee*). We also saw large herds of wet ground swamp deer (*Rucervus duvaucelii*), a few wild boars and a troop of rhesus macaques. The adult female rhesus found in Assam have very distinct red-colored rear-quarters that are very striking and different from the same species that I saw in M.P. Based on my experience in Kaziranga your best chance of getting close to the Reserve's wildlife is by elephant-back versus than by vehicle. We were then met and transferred to the Diphlu Lodge near to the western section of Kaziranga. The lodge is located just across the Diphlu River from the Reserve. Wildlife is often seen just across the River. Surrounded by a fringe of natural vegetation, the Lodge grounds would be a great place for night mammal-viewing except for the fact that wild buffalo and rhino often cross the River onto the Lodge grounds at night. After dark you are escorted by lodge security to your room to avoid these potentially dangerous visitors.

Diphlu Lodge accommodations are excellent, very similar to a five-star South African lodge. The food and service is exceptional as well. The naturalists here are enthusiastic but still a bit inexperienced compared to the others I had met in India. Vishal and I did an afternoon drive with a Diphlu naturalist to the western sector of Kaziranga along with Jan Knaapen, Executive Director of Diphlu River Lodge and Jungle Travels India. The sheer numbers of wildlife – swamp deer, hog deer, wild buffalo and rhino were stunning. In one open expanse we saw 37 individual rhinos. Here we also saw two groups of smooth-coated otters (*Lutrogale perspicillata*). The biomass of large

mammals alone must equal some of the more prolific African reserves. From Kaziranga one can imagine what at one time all of the Sub-Continents major river systems – not only the Brahmaputra as this small segment shows, but also the Ganges and the Indus must have once been like. Great wildlife areas with immense concentrations of herbivores creating a large prey base for the water-tolerant tiger. The bird life is also extraordinary and any serious birder planning to visit India needs to include Kaziranga on their itinerary.

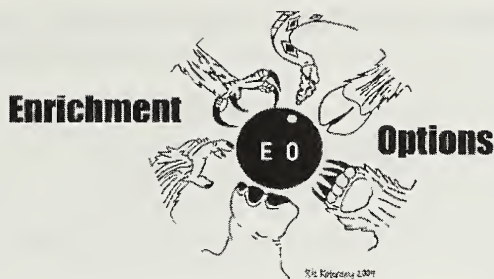
It was also here that I saw my ninth tiger of the trip. She was nearby a water buffalo kill and we had a brief glimpse at a distance. This is evidently how most tourists to Kaziranga see a tiger. Vishal believes that the visitors most likely to see a tiger here are birders looking out from the various observation towers scattered around the Reserve. He feels that the tigers in Kaziranga are so used to human contact and potential harassment, they are shyer and more elusive than elsewhere in India. In any case, Kaziranga is reported to have the largest, best-protected and growing population of tigers in India. Vishal has his own theory that these are tigers that have learned to be as invisible or cryptic around people and they therefore survive. There are known population of leopards in Africa that have survived in heavily populated areas using similar strategies.

The next morning we drove to the Hoolock Gibbon Sanctuary located east of the Reserve. The Sanctuary is the only area in India that protects six species of primates. Here again, it was a cold wet morning and animal activity was low. However, I was shown a male/female pair of hoolock gibbons (*Hoolock hoolock*), one lone male-capped langur (*Trachypithecus pileatus*) as well as one Malayan giant squirrel (*Ratufa bicolor*) and an Indian muntjac (*Muntiacus muntjak*). One of our Lodge-based naturalists who was walking behind us heard a troop of pig-tailed macaques. The Gibbon Sanctuary has to be a “must see” for any serious eco-tourist to Assam, not only for its primates but also for the good forest birding.

Vishal and I then were driven to the Brahmaputra where we did a quick site inspection of the Jungle Travels India river cruise boat. For the eco-tourist with more time to travel, Jungle Travels India (jungletravelsindia.com) has an incredible natural and cultural history cruise along the Brahmaputra, visiting four different Assam Reserves. We both inspected the boat, which appeared to exceed in size and cabin quality what I had previously read about it. However, after leaving the boat the highlight for me was seeing at least two Ganges River dolphins (*Platanista gangetica*) breaching downstream.

After dropping off Vishal for his return flight to Delhi, I had another game drive in the western section of Kaziranga. I saw more hog and swamp deer, water buffalo, one small herd of Asian elephants in grass “as high as an elephants eye”, another group of otters and lots of rhinos as well. It was then that it occurred to me that the one-horned Asian rhino in the sub-continent must be the ecological equivalent of the African hippo (*Hippopotamus amphibious*) - that being a large grazing animal, found near water that is normally impervious to predation whose numbers can be at a high density. I was scheduled to fly back to Delhi from Guwahati located west of Kaziranga. This was a flight I made on time but, due to road construction and hundreds of trucks on the road it was my most adventurous drive in India.

And what are my post-trip impressions of India? With a population of what is now believed to be 1.2 billion people, the country still has an incredible amount of wildlife. That combined with the cultural attractions of a 2,000 + years of history make it a world-class travel destination. The accommodations and tour guiding are the equal of any eco-tourist location I have experienced in East and Southern Africa, South East Asia and the Amazon. The Madhya Pradesh Tiger Circuit in particular has the potential of being an important international natural history destination and it offers the best chance anywhere of seeing a tiger in the wild, one of the world’s most charismatic and rarest species of great cats. India has been given a great deal of criticism for its loss of wildlife numbers since its independence. However, in spite of immense human population pressure, it has lost only one species of large mammal or primate since 1948, that being the cheetah (*Acinonyx jubatus venaticus*). There is something positive to be said for that!



Feeling Stuck in a Rut? Ideas on How to Enrich Your Enrichment

By Dawn Neptune

As we all know, one of the driving principals of enrichment is novelty. It is the dynamic nature of enrichment that continually stimulates the animal mind and promotes their curiosity, exploration and behavioral development. But do you sometimes feel a bit stuck in a rut, just offering the “same old thing” and simply want to try and spice things up? With a little time and effort, you can tap into a virtually limitless wellspring of creative enrichment ideas with these tips to stimulate creative thinking and your own brainstorming processes.



A PVC Pinwheel feeder for a zebra. *Photo by the Author.*

#1 Start with a “yes, yes” can do attitude- not a “yes, but” attitude. Let go of all previous assumptions. Don’t focus on what won’t, doesn’t or hasn’t worked in the past. Try to look at things with a fresh, new insight.

#2 Take a second look at your goals. Reference your species ‘Enrichment Strategies’. Think like the animal and target their unique talents and behaviors. How do they think? Process their world? Interpret stimuli? What are their motivations? What might be unexpected, out of the norm or catch them by surprise? Do some behavioral goals need more attention than others?



Toucan tossing around grass grown in a plastic saucer.



Cotton-top Tamarin acquiring diet from suet feeder made for wild birds.

#3 Explore your environment. Take some time to look closely at your enrichment device supply. Poke around in off-the-beaten path Zoo storage areas- it’s amazing what we forget we even had! (Don’t forget Grounds, Maintenance, barns and basements for construction supply ideas!) Are there old favorites that need repair? Do you need new supplies or replacements? Devices completed? Also explore new environments. Check out other area’s supply for new ideas. And take a renewed look at the exhibit space- try to see it through the animal’s eyes.

#4 Evaluate old designs. Review existing approvals and devices - for all species Zoo-wide. (You just never know where an idea might come from! I once modified an aquatic idea for hoofstock!) Imagine how you might combine devices for different presentations or increased complexity, or even modify a manipulative device into a sensory or environmental option. Ask yourself, “Are there devices that have been approved but never constructed?”

#5 Seek inspiration. Look at photos of the animals in their natural habitats. Go observe enrichment in action with other keepers and species. Go aisle/window shopping at a local hardware store. Explore the Maintenance Barn. Google-surf “zoo enrichment”. Leaf through supply catalogs. Attend an AAZK conference, enrichment-related conference, workshop or continuing education opportunity. Visit other zoos. Bring in toys, puzzles, small construction supplies that require manual manipulation and design

enrichment prototypes. (Toys unlock reasoning and assist in activating parts of the brain required for creativity.)

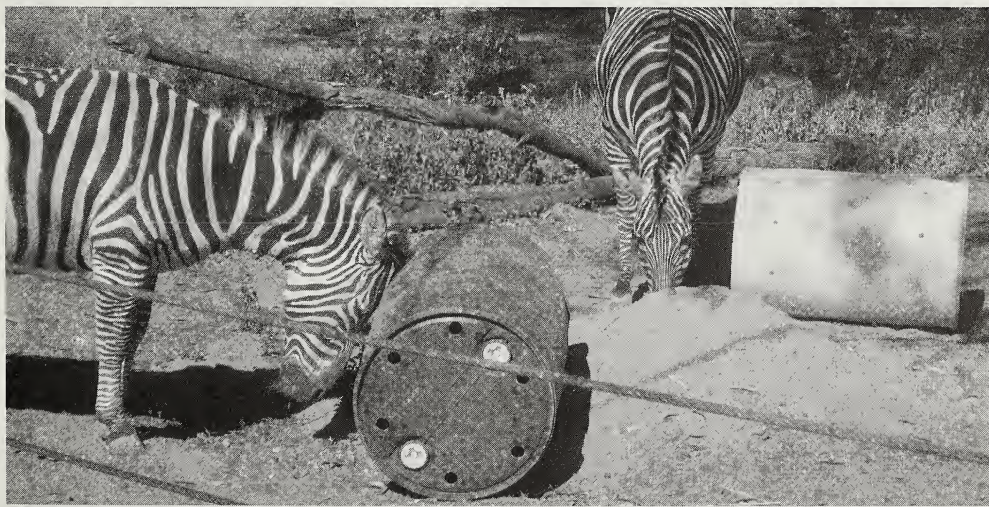
#6 Look at things from differing perspectives. Channel your inner Director, Behavioral Programs Coordinator, Primary (or Relief) Keeper, Vet, Visitor, Grounds Supervisor, Maintenance Crewmember, Thomas Edison, or...even try to think like a kid. Imagine others' thoughts, ideas, motivations and perspectives on enrichment. One might like ideas related to diet distribution, another to increase plant growth or animal visibility or another is great with complicated construction designs. Don't limit your ideas to your own approach to enrichment.

#7 Write/Sketch everything. Use visual brainstorming. Try using a design model to flesh out your ideas (i.e. bubble charts, vision boards, etc.). Use post-its, dry erase boards, sidewalk chalk, colored pens/markers or even crayons to stimulate those creative thoughts.

#8 Read-Read-Read...and then read some more - you have got to research new ideas. Check out your local library, zoo library resources, university libraries, the *AKF* Enrichment Options Column or the Behavioral Husbandry Committee resources on the AAZK website - it's FULL of great information, inspiration and motivation. Learn (even more) about the animal. The internet is also a great source of ideas and information.

#9 Use manpower- more heads are *always* better than one! Collaborate with your co-workers on ideas. Have team meetings to brainstorm as a group. Divvy and delegate projects. Have monthly meetings and ask for feedback. Utilize your amazing volunteers. Talk to zoo colleagues. Use professional list serves and social media outlets.

#10 Fall in love again with what you do. Nothing will inspire you more than to remember why you're here and why you do what you do. Find beauty in even the most mundane of tasks. Rekindle your passion. If the animals could thank you, they would.



Large barrel found unused on zoo grounds is re-purposed into a large rolling food dispenser.

CONSERVATION STATION

Rain Gardens: Bringing Conservation Home

Mary Ann Cisneros

AAZK Conservation Committee

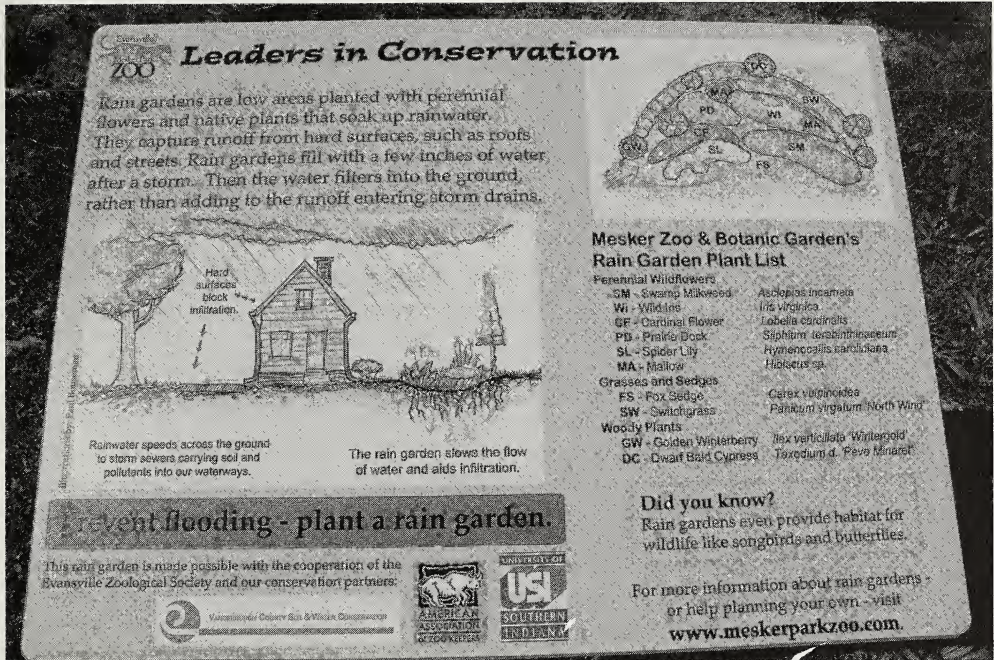
Spring has sprung and an early summer planting of a rain garden will not only leave your lawn looking lovely, but your “green” conscious clear. Rain gardens are landscaped areas using native plants that reduce storm water runoff and can provide considerable environmental benefits to your community. Besides being aesthetically pleasing, rain gardens reduce flooding, protect streams and lakes from pollutants carried by urban storm water runoff, and increase the amount of water filtering into the ground to help recharge local aquifers. An added bonus is that a new habitat is created for birds, butterflies, and beneficial insects.

In 2009, two events at Mesker Park Zoo promoted and celebrated the establishment of rain gardens in our community. The first event was the installation of a rain garden at our new entrance. Using a grant from the local Soil and Water Conservation District, MPZ AAZK partnered with several groups to bring this demonstration garden to Mesker Park Zoo and Botanic Garden. Our own grounds curator



Garden view from the drinking fountains

and staff, University of Southern Indiana (USI) students and faculty, and the Evansville Zoological Society worked together to provide visitors an example of a way to bring conservation home. The zoo used the planting day to teach about the mechanics of rain gardens and had volunteers (lucky USI students and MPZ AAZK members) perform the dirty work. The second event was a dedication a few months after the planting so that visitors could get a look at the garden as it began to establish itself.



Rain garden graphic at Mesker Park Zoo and Botanic Garden

Both these events also allowed the Soil and Water Conservation District to promote their Backyard Conservation Grant. This grant provided a cost-share/rebate program for citizens in Vanderburgh County who put in a rain garden.

The rain garden at the zoo was and is a success. It is a beautiful addition to our zoo landscape and an ambassador for backyard conservation that is hard to ignore when visitors walk through our gates. It is a happy coincidence that, in order to quench their thirst from our drinking fountains, guests have a great view of it!

Now for you DIY's out there! A rain garden can be put in cheaply and, once they become fully established (around two years) little or no maintenance is required of them. So if you want your yard to be a first defense against flooding in your neighborhood and pollutants getting into local waterways please check out the following websites:

clean-water.uwex.edu/pubs/pdf/rgmanual.pdf,
meskerparkzoo.com/conservation/garden.php

They will give you the nitty gritty on rain garden construction for your yard. They also provide design plans and plants that will work in your area. Be sure to look to your local Soil and Water Conservation District to see if there is any financial assistance available for making your yard greener. Use your resources and let's start planting for a cleaner environment!

Training Tales...



Where you can share your training experiences!
Training Tales Editors – Jay Pratte, Henry Doorly Zoo; and
Kim Kezer, Zoo New England

Ideas to Help New Training Programs (Part Two)

(Part One appeared in the March 2012 *AKF* issue, Vol. 39, No. 3)

By

Jay Pratte, Animal Training Coordinator, Omaha's Henry Doorly Zoo,
AAZK Behavioral Husbandry Committee Member

Initial Training and Shaping of Behaviors

Operant Conditioning is a type of learning in which behaviour is determined by its consequences. A behaviour is strengthened if followed by reinforcement [positive or negative] and diminished if followed by punishment (AAZK/AZA, 2003). In training, "shaping" is the process of using operant learning techniques to take several small, progressive steps with an animal to eventually reach your desired goal. The trainer rewards gradual movements of the animal that can be "shaped" or guided into greater or more complex behaviours.

Here is an example of "shaping" and how it can be used to teach a more complex command. We will use "target" for our initial command. You can use a short length of PVC, fasten a ball to the end of a stick, or even grab a nearby scrub brush. (For more ideas read "Training Tools on a Budget" by Julie Hartell-DeNardo, 2009) The end goal is for the animal to touch their nose to the "target" when you ask. This is a very simple behaviour that capitalizes on an animal's curiosity, as animals often want to see what you are holding and investigate. If this happens, you sound your bridge and provide a large reward for the response.

But what if the animal does not touch or approach the target right away? Then we would "shape" the behaviour. Consider the possible steps involved; write these steps down to develop a "shaping plan". Shaping plans aid in visualizing a possible progression of the behaviour. It is ideal to plan ahead before you train any new behaviour. Write down the small steps you might ask for before you begin training, so that you know how to proceed towards your goal. If the animal does something that you didn't expect, or was not part of your list or "plan," but is still a desired behaviour, do not be afraid to change your list of steps. Once a trainer knows how to use small steps to shape a challenging behaviour, an animal can be taught just about anything.

For example, a very simple one for target training might look like:

Behaviour: Target

Cue: Present target pole, "Target."

Desired response: Animal touches nose to ball on target pole.

Bridge: Whistle

Trainer: Jay

Animal(s): 1.0 White Throated Monitor Lizard
"Ngozi"

- Present the target and issue the verbal cue "target".
- Bridge ANY slight movements toward the target pole. Bridge and reward.
- Once behaviour is taking shape, only bridge and reward the quickest, cleanest and most accurate responses.
- Once they understand the target behaviour, begin to move the target pole to different locations near the animal's station.
- Each time, increase the expectation for the animal.
- Gradually increase duration of time animal is touching target pole.

Hint: Once the animal makes these small movements towards the target on cue, by rewarding with food ONLY the best responses, the animal should learn that the closer it moves its nose to your target, the better the reward. Still bridge any others, but make sure the animal is well-rewarded for the "bigger" response. Differentially reinforcing desired behaviours (strategically providing rewards, or better quality rewards for only improved responses closer to the goal) will teach the animal that the new responses will net better rewards fairly quickly. You can always fall back to an earlier step if faced with regression or frustration.

Once you understand the basics of shaping and have practiced with simple behaviours such as "target," you can use these to plan more complex cues and goals. Listed below are examples of basic behaviours with possible shaping plans that can be useful to train many species.



Monitor lizard target training. *Photo by Author*

Behaviour:

Cue: Both arms extended straight up in air, flat palms facing mesh, "Up."

Desired response: Animal stands up on hind legs.

Present target just up out of animal's reach, cue Target.

Bridge and reward any raising of body. "Jackpot" (huge reward) big steps.

Once they respond well and are changing position to reach target, pair new cues as you move target higher.

Bridge and reward the quickest, cleanest and most accurate responses.

Increase duration animal stands on hind legs when cued.

Hint: This behavior allows you to monitor an animal's physical health and see regions of the body that might not otherwise be visible. Think about other uses as well. I have personally trained this behaviour to a mandrill afflicted with spondylosis to encourage him to stretch out his back a few times a day. Simple behaviours can suddenly be used for physical therapy!

Behaviour:

Cue: Point to ground, "Down."

Desired response: Animal lies down facing you.

- Present target low, towards floor of enclosure or ground.

- Bridge and reward any lowering of body. “Jackpot” big steps.
- Pair new cues.
- Bridge and reward the quickest, cleanest and most accurate responses.
- Increase duration animal lies down facing you.

Hint: “Down” is a means of having animals remain calm for an extended duration of time. It can then be added into a behavioural chain for more complex medical training goals, such as side presentation for injections (Miller, 2002), ultrasounds, tail blood draws, etc.

Behaviour:

Cue: Point in direction/to door where you want animal to move, “Shift.”

Desired response: Animal moves to desired location.

- Have second trainer hold target pole a significant distance from you in the direction you want animal to move. Cue Target and point to second trainer. Second trainer can tell animal “Good Shift” as it approaches them.
- Bridge any approaches to target. Second trainer can provide the immediate food reward after bridge. “Jackpot” big steps.
- Increase expectations, moving target further away, even to other side of shift door.
- Pair new cues.
- Bridge and reward the quickest, cleanest and most accurate responses.
- Remove second trainer and target pole as animal improves with desired responses, follow as animal shifts to bridge and reward.

Hint: All animals need to be taught to shift through a desired door or to a different area on cue. The important point here is to remember to bridge and reward correct shifting behaviours. Many keepers become complacent in reinforcing good shifting once animals do it well, and this can lead to regression and breakdown of desired responses down the road. Find some means, even intermittently, of reinforcing proper shifting, even if the animal moves to a location that is difficult to access.



The author during a tiger training session.

Behaviour:

Cue: Hand up, palm forward, mirroring which foot of theirs you want presented, “Paw(Left)/Foot(Right).”

Desired response: Animal places requested foot on side of enclosure facing you.

- Present target pole above the animal just out of what they can stretch to reach.
- Bridge and reward any lifting of one limb off of ground. “Jackpot” big steps.
- Pair appropriate cue with foot they are moving.
- Bridge and reward the quickest, cleanest and most accurate responses.
- Increase duration animal presents foot.
- Use same steps for opposite foot and other cue.

Hint: As you train this behaviour, one technique that helps is to present the target above their head and slightly to one side, not so much that they will get up and move, but enough that they will lean their weight onto one foot, making it more likely that they will lift the other one. Paw/foot presentation

allows you to observe physical health of limbs, treat injuries, provide nail trims voluntarily, and even allows for potential training for x-rays or other medical behaviours such as blood draws using specially constructed sleeves.

Remember, these are only ideas/examples, and the concepts also apply to all taxa. Every animal is different and learns differently. There is no “right way” to train a behaviour. Learn from your animal and its responses, and modify your shaping approach accordingly. If the animal becomes confused with any of these new commands, just back up a few steps, and use the target again to help them remember. It is not a bad thing if they forget, always just be ready to back up a few steps and help them remember what you are asking for.

Below are 10 simple “Rules of Shaping” to help you remember this process and become skilled with it: (modified from Karen Pryor’s “10 Laws of Shaping” from her book *Don’t Shoot the Dog*)

1. Raise your expectations (or movements) for the animal in small steps so that the animal always has a good chance of earning a food reward.
2. Train one step of any particular behaviour at a time. Don’t try to shape two things at once (for example, do not try and teach a bear “lie down” and “stand up” at the same time).
3. During shaping, before you raise your expectation for the animal’s next step, make sure the step you were just working on gets the correct response from the animal every time you ask.
4. When introducing a new step, or expecting more, use the bridge to reward any of the previous steps. That means if an animal does not progress to your next step quickly, still whistle/click for any responses that were previous or smaller steps.
5. Stay ahead of your subject; plan your shaping program completely, so that if the subject makes sudden progress (for example, suddenly turns and sniffs right at your target), you are aware of what to reinforce next.
6. Don’t change trainers in midstream. You can have several trainers per animal, but stick to one person per behaviour.
7. If one shaping procedure is not working, try something different. There are many possible ways to train any desired behaviour; there is no ONE way or “right” way.
8. Don’t interrupt a training session unless it is an emergency. Give the animal your full attention, since ignoring an animal is technically “negative punishment” (time outs).
9. If the animal seems confused or as if it doesn’t “remember” the behaviour, don’t be afraid to move back a few steps to something you know the animal can do, an earlier step in your shaping process. Remind the animal of the steps with easy requests that will earn a reward.
10. End each session positively, with the animal getting a food reward for responding to a command properly. If the animal is “happy” at the end of a training session, it will look forward to working for you in the future.

Record Keeping

Do it. Create an Excel file, get a notebook, however you choose to record your progress, just be sure you do so. Keeping detailed training logs outlines your progress with the animals in your care, which can prove beneficial on many levels. You can look back on training records for one animal to recall what succeeded (or didn’t) in order to set more informed goals with a different animal. You may leave a facility, and records would allow the next person coming in to continue your work with the animals, ensuring regularity for the animals that will reduce stress levels during a period of change. You may transfer an animal to another facility, and can send records along to assist new staff members in making the animal more comfortable. Professional record keeping also demonstrates your level of dedication and care to your animals in response to inquiries into husbandry practices; these can arise in the form of AZA or USDA inspections, management evaluating your work, or even addressing public or media concerns regarding an animal’s welfare.

Most of all, keep records for yourself to chart your progress and success with the animals you are training. It is a valuable source of self-reinforcement.

Resources

Use all of the resources at your disposal, and there are a lot of them. Your co-workers are an excellent source of feedback and ideas. Journal articles and columns exist that discuss virtually every aspect of training if you spend a little time searching. There are also several discussion forums through AZA and other listserves that can address general training inquiries, or species specific issues. Remember, no single person has all of the answers. A little time and a little research will aid in overcoming training obstacles. The references below are but a few of the resources out there that will help you and your program to succeed!

Hopefully the background research and goal setting ideas from Part One, paired with practical training aspects in Part Two, will help with jump-starting a new program, or even refreshing an existing one. Set your goals, and always be aware of what you may actually be teaching the animal, as opposed to what you think you might be teaching it. It's not uncommon to become frustrated when the animal is not learning what you want. Back up, look over the entire process, get feedback from a peer, and see it from the animal's perspective. No obstacle is insurmountable in training. Hopefully these ideas, along with the amazing training resources available, will aid you in succeeding with your training goals.

Once you achieve success in your training, your experiences, both good and bad, are valuable to share. *AKF* is a great way to share information, promote new ideas and inspire all levels of trainers. Seeing your experience in print is a wonderful way to reinforce your training efforts, so do not hesitate to submit your training paper to *Training Tales* for all to read!!

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Moderating Undesirable Behavior in Petting Zoo Animals

Research has indicated that zoo visitors have a more positive experience if they have direct human-animal interaction while at the zoo. One safe and popular way to achieve this personal interaction is at a petting zoo. At Zoo Atlanta, researchers wanted to find out if they could reduce undesirable animal behaviors such as aggressive and escape behaviors by offering some of the animals in their petting zoo a retreat space.

This study tracked the undesirable behaviors of seven animals housed in the petting zoo at Zoo Atlanta and sought to understand if the availability of retreat space would help lower the rate of undesirable behaviors. The subjects were five African pygmy goats (*Capra hircus*) and two Romanov sheep (*Ovis aries*). The authors defined “undesirable behaviors” as behaviors that were incompatible with the intent of a petting zoo (i.e. behaviors that were aggressive and/or attempts to escape). In the sheep, these behaviors included “rearing, charging, foot-stamping, head-butting, head-tossing, threat-jumps, rigid alarm posture, nose-blowing, and sudden movements towards conspecifics.” Aggressive and escape behaviors in the pygmy goats included “rearing, charging, foot-stamping, head-butting, and head-tossing.”

As prey animals, sheep and goats are often fearful of humans. African pygmy goats are actually gregarious which is why they are often included in petting zoos. Earlier research shows that Romanov sheep, on the other hand, are “...found to have the strongest negative response to an approaching human and to keep the greatest distance between themselves and humans when compared with other sheep breeds.”



Who's a bad goat? Simple steps can reduce “undesirable behaviors” in petting zoo animals.

In this study, the researchers wanted to give the sheep and goats some control over their environment. There were three different scenarios: no-retreat space; semi-retreat space, and full-retreat space. Data were collected during each of these three scenarios. In the no-retreat space situation, the public had access to all parts of the animals' yard. In the semi-retreat space, part of the yard was sectioned off by nailing a board horizontally off the ground so that the animals could enter the semi-retreat space by stepping under the barrier. The visitors were asked not to go in to this area, but depending on where the animal went in the semi-retreat area, the public could still in some instances reach the animals to touch them.

In the full-retreat space the same area was sectioned off but this time the area was surrounded by a chicken wire fence and had three entrance/exit points. When the animals were in this area they could not be reached by the visitors, although they still had visual and auditory access.

The results found that overall the Romanov sheep engaged in undesirable behaviors at a higher rate than the African pygmy goats, which is in line with what is known about their dispositions. In addition, higher visitor density increased undesirable behavior in both species. As the number of visitors in the yard increased, so did the rate of undesirable behaviors.

The evidence surrounding the use of retreat space to decrease undesirable behaviors was mixed. For both the sheep and the goats, the use of the Full retreat set up significantly decreased undesirable behaviors. However, the rate of undesirable behaviors in the Semi-retreat experiment was significantly higher than the rate of undesirable behaviors during Full retreat and no retreat. The authors speculate that this could be due to the physical set up of the Semi-retreat barrier in which the public were still able to touch the animals through the barrier. This suggests that while offering a retreat space for petting zoo animals is very important, the construction of that retreat space should be carefully considered.

Practical Applications for Zookeepers:

When managing a petting zoo, it is extremely important to research the animals you would like to include in the petting zoo. Some species lend themselves to the petting zoo environment better than others.

Keepers can expect a higher rate of undesirable behaviors as the number of visitors in the petting zoo area increases. Many zoos limit the number of people that can be present in the petting zoo at one time, thus making the experience more comfortable for the animals, which in turn makes the experience better for the visitor.

Offering an area of the petting zoo where the animals can choose to completely get away from the public can be very beneficial and can significantly decrease an animal's aggressive or escape behaviors.

How a zoo designs this "retreat space" is very important. This study shows that a poorly designed retreat space can actually increase undesirable behaviors. A retreat space that makes use of chicken wire (as done in this article) offers the animal the chance to feel as though they are in control of the situation while still allowing the visitors to have visual access to the animal, which makes the visitors happy.

To View the Complete Article:

Anderson, U.S., Benne, M., Bloomsmith, M.A., and Maple, T.L. (2012), Retreat Space and Human Visitor Density Moderate Undesirable Behavior in Petting Zoo Animals. *Journal of Applied Animal Welfare Science*, 5:2, 125-137.

Asking Zoo Visitors to Change

Zoos want to have a positive impact on the lives of wild animals, and one way to do this is to educate zoo visitors about how they can make positive conservation changes. This study looked at how this affects the zoo visitors' experience. Specifically, does asking a zoo visitor to engage in conservation-related behaviors throughout their visit negatively impact their visit?

This question was asked at two different institutions in Australia. The first study was conducted at Melbourne Zoo, a traditional zoo that saw 1,137,000 visitors during 2010-2011. The second study was conducted at Werribee Open Range Zoo, a larger, naturalistic zoo with a drive-through bus tour. Werribee attracted 301,000 during 2010-2011.

In study number one, zoo visitors were asked to engage in conservation behaviors by keepers during keeper talks. There were ten different messages that visitors could potentially have heard throughout the day. Below is a list of the behaviors along with the animal that the keeper talk was given about:

Tree Kangaroo – Donate to the Tenkile project after the presentation

Platypus – Purchase phosphate-free detergent at the next opportunity

Elephants – Purchase sustainable-timber at the next opportunity

Wombat – Phone hotline next time injured wildlife is seen beside the road

Tiger – Purchase tiger-friendly coffee at the next opportunity

Orangutan – Sign and post a petition card lobbying Food Standards Australia to mandate that all products containing palm oil are clearly labeled.

Gorilla – recycle mobile phone when it is replaced.

Penguin – Purchase sustainably-harvested seafood at the next opportunity

Bear – sign a petition to free bears from slavery

Frog – Take four-minute showers

Visitors were approached immediately after the presentations and asked how many behavior requests they could remember. The visitors were also asked “what the maximum number of behavior requests they felt the zoo, via any communicative media, should ask them during a visit.” In addition, the study sought to find out if zoo visitors' experiences were negatively affected by the number of times they were asked to engage in conservation behaviors.

In study number two, zoo visitors were asked to engage in only one behavior: to purchase one of several bead products from the zoo gift shop to support the “Beads for Wildlife” campaign. The beaded items are made by impoverished communities in Kenya, and the program seeks to offer alternative income methods to those involved in the program. The message to buy the beads was communicated through keeper talks, bus tours, interactions with a costumed character, and signage in the zoo's restaurant and gift shop.

Visitors in study number two were approached as they were leaving the zoo at the end of the day. They were asked if they could remember seeing or hearing requests to purchase the beads and in what form they received the request (signage, keeper talk, etc.). These visitors, as in study 1, were asked how many times they felt that the zoo should ask them to purchase beads and they were asked how the request to purchase the beads affected their zoo experience.

The authors also examined the difference in recall between face-to-face and “static” requests to purchase the beads. Of the 354 respondents, 88% recalled hearing requests to purchase the beads from a face-to-face encounter and only 20% remembered seeing signage about purchasing the beads. This suggests that behavior changes in our visitors may be more likely to occur when asked by a person and not just presented on signs.

The results of this study are very encouraging. In study number one, only four visitors felt that being asked to perform a range of conservation behaviors had a negative impact on their zoo visit. In fact,

only 3% had their “personal threshold” of being asked to do something too many times crossed. This suggests that the number of visitors that will start ignoring or being irritated by requests for multiple conservation behaviors is low.

In study number two, ten respondents (3%) felt that the number of requests to buy the beaded products had a detrimental effect on their experience at the zoo. Also in study number two it is clear that face-to-face requests for behaviors are remembered better by the visitor.

It is the job of zoos to educate the public and encourage them to do what they can to support wildlife. While many visitors come to the zoo for the social and recreational aspects, this study shows that asking them to change their behavior to benefit wildlife does not have a detrimental impact on their visit. In fact, this study suggests “...that the educational aspect of a zoo visit may indeed be strengthened by drawing visitors’ attention to particular wildlife-related issues and campaigns.”

Practical Applications for Zookeepers:

Don’t be afraid to include specific requests for pro-conservation behavior in your keeper talks. Tell the visitors about your animals, and then tell them specific things they can do to help their wild counterparts.

Do engage with the visitors about pro-conservation behaviors. Seeing something on a sign isn’t as effective and will not be remembered as well as hearing something from a zookeeper. Do share your individual stories. For example, tell the visitors how you gather up your family members’ old cell phones and recycle them for gorilla conservation. If you make your story more personal, the visitors are more likely to remember it and engage in similar conservation behaviors.

Smith, L.D.G., Curtis, J., Mair, J., van Dijk, P.A. 2012. Requests for Zoo Visitors to Undertake Pro-wildlife Behaviour: How Many is Too Many? *Tourism Management*, 1-9.

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— CONSERVATION/LEGISLATIVE UPDATE —

Florida HB 1117 Vetoed As Unnecessary

On 6 April 2012, Governor Rick Scott vetoed HB 1117, the Conservation of Wildlife Bill. Known as the “Jurassic Park Bill” by its critics, the proposal had been introduced early in the year by Rep. Shawn Harris. The bill would allow AZA-accredited, Florida state zoos and aquariums to lease state land, with cabinet approval, for breeding non-native species. Carnivores and primates were prohibited and the bill called for detailed disaster planning.

According to reporting by Bruce Ritchie for the *Florida Current*, the Florida Association of Zoos and Aquariums (FLAZA) had said the action was necessary to “prevent extinction of elephants, giraffes and other African herd animals by giving them space to roam.” Earlier in the year, Larry Killmar, President of FLAZA and Vice President of Lowry Park Zoo, was quoted in the *Tampa Bay Times* saying that without room for breeding populations, the zoos are “like a shoe store with no warehouse. Our inventory is everything that is on display.”

Opponents of the bill included the Florida Wildlife Federation, Defenders of Wildlife, People for the Ethical Treatment of Animals and Audubon of Florida. Those in opposition said that the public lands should be used to conserve native wildlife. Before Governor Scott vetoed the bill it had sailed through both the House (113 for, 2 against) and Senate (39 for, 1 against).

While critics of the bill have claimed victory the veto is not an outright refusal to have state land used for *ex-situ* conservation. In Governor Scott’s veto letter he stated “The authority sought by the bill already exists in current law and is therefore unnecessary. The Board of Trustees of the Internal Improvement Trust Fund and the governing boards of the five water management districts may currently authorize the use of state-owned and district-owned lands, respectively, for any use not inconsistent with the State Constitution and Florida Statutes.”

The National Elephant Center in Florida will not be influenced by this action. The 225 acres in Indian River County are being leased from privately-owned lands, formerly citrus groves. Groundbreaking for Phase One of the National Elephant Center began early in April. The first phase will include four linking pastures which together will provide more than 20 acres for an estimated nine elephants.

Sources:

flsenate.gov and flgov.com

Florida Current, 30 March & 6 April 2012

Tampa Bay Times, 7 April 2012

The National Elephant Center

Bad “Medicine”

Using DNA sequencing, technology researchers at Australia’s Murdoch University have found endangered animals, as well as toxic plants, contained within multiple samples from seized traditional Chinese medicines. Among the animal traces found were CITES trade-restricted species such as the Asiatic black bear (*Ursus thibetanus*) and saiga antelope (*Saiga tatarica*), the latter of which is listed as critically endangered on the IUCN red list.

Source: *Nutrition Horizon*, 16 April 2012



Asiatic black bear (*Ursus thibetanus*)

Whale Alert

Numbering less than 400 individuals, the North Atlantic right whale (*Eubalaena glacialis*) is the most endangered whale species. Knowing this, the National Oceanic and Atmospheric Administration in 2008 mandated speed limits in areas of vulnerability. Whales and other marine species, such as the manatee (*Trichechus manatus*) have a much higher chance of evading, or surviving an impact when watercraft travel at lower speeds. Unfortunately for the whales, the Bush administration, pressured by the shipping industry which claims significant costs associated with the lower speeds, ensured that the speed restrictions would expire in 2013.

Along with the speed limits, NOAA has also been active in testing other methods to reduce collisions. One such effort has resulted in the development of a new free iPhone app. *Whale Alert* combines aircraft sightings with GPS and acoustic buoys to relay information to an app user.

Sources:

The Atlantic, September 2010

EarthNC

Forbes.com, 6 April 2012

White-nose Syndrome and the Wildlife Disease Emergency Act

The month of April 2011 found white-nose syndrome in previously unaffected colonies of bats at Lookout Mountain, Tennessee and at the C & O Canal National Park in Washington D.C. These two new appearances come with no surprise as the disease has spread to colonies of bats in 19 states and four Canadian provinces. According to the Center for Biological Diversity, bat populations in the northeast are down by more than 90 percent and extinction of several species is a very real possibility.

Last year, Senator Frank Lautenberg introduced the Wildlife Disease Emergency Act (S. 357) which would permit the Interior Department to implement grants to rapid response teams for reacting to a declared emergency such as white-nose syndrome, chytrid fungus or West Nile virus. The bill would establish a wildlife disease emergency fund to be administered by the Secretary of the Interior. At the time of this writing, no action, beyond senate meetings and discussion, has been taken on S 357.

“The bill needs immediate passage,” said Mollie Matteson, a bat specialist with the Center for Biological Diversity. “With bats dying on the doorstep of the nation’s capital, decision-makers need to understand that the health of the natural world has real impact on people. Buggier nights in D.C. may be the very least of our problems if more resources are not put to responding to this disease — and soon.”

Currently, nine species of bats, all hibernating species, some with mortality rates approaching 100 percent, have been identified. They are the big brown (*Eptesicus fuscus*), tri-colored (*Perimyotis subflavus*), eastern small-footed (*Myotis leibii*), little brown (*M. lucifugus*), northern (*M. septentrionalis*), Indiana (*M. sodalis*), gray (*M. grisescens*), cave (*M. velifer*), and the southeastern (*M. austroriparius*). Even before white-nose syndrome, first discovered in 2006-2007, both the Indiana and gray myotis were listed as endangered species.

Source:

The Center for Biological Diversity

U.S. Senate

Bat Conservation International

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